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ABSTRACT

Six resource centers in Scotland are described and discussed to illustrate the varieties of centers which exist, and to promote the development of a system of resource centers throughout the country. Although the precise nature and function of each of the centers varies, contributers to this project elaborate on the reasons for the creation of a particular center, its physical development, the staff and materials available, the problems that are handled, and the needs served within the school context. An extensive bibliography includes sections on the challenge of the new media, phonodiscs and tapes, planning and adapting for a media center, cataloging and classification systems, and guides to software catalogs by subject and institution index. (MER)

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# A RESOURCES CENTRE

## IS A STATE OF MIND

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

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# FOREWORD

The Scottish Educational Film Association despite its title has interests far beyond film and it concerns itself with all aspects of audio-visual media in education. Recently the Association has described its aims in a twelve-point document which has been given wide circulation in Scotland. One of these aims is to "promote the development of a system of resource centres throughout education." The idea of resource centres is not entirely new - what is new is the importance now being attached to them but there is so far, a notable lack of agreement as to their precise nature and function. This lack of agreement is understandable and even desirable since so many of them are at the experimental stage. It seemed sensible, therefore, to make them the subject of one of the Association's publications.

It has not been our aim to give a comprehensive survey of resource centres but we are grateful for the ready way in which so many busy educationists who are among the new experts in this field, have responded to our request to contribute articles.

James S. Meldrum, M.A., M.Ed., F.C.I.S.,
Director of Education, Stirlingshire,
Scotland,
President, Scottish Educational Film Association.

# PREFACE

There are still many teachers to whom the terms Inter Disciplinary Enquiry and Resources Centres mean very little, and there are many who interpret the meanings in very different ways. There are some who would assert that the idea of Inter Disciplinary Enquiry can be divorced from the idea of Resources Centres. That certainly, in the view of the present writers, is untenable.

While Resources Centres do vary in size, complexity and use, and can be used to fill a variety of educational needs, they are fundamental to the idea of I.D.E., and I.D.E. offers perhaps the best chance of solving the problem of handling mixed ability classes.

Whatever the reason for their creation in a school, Resources Centres do cause discussion of educational problems, examination of philosophies and reassessment of aims. They do, in a curious way, sustain a demand, and generate further demands on their services. Once established, they can be seen, even by sceptics, to fill a need, to play a major role in the learning situation.

Once the philosophy is accepted, and the aim agreed, the physical development is a matter of chance - what is available in the school in the way of space, equipment, materials, staff? To what extent will the local authority help? Can the advisory side of the County organization guide and sustain? Certainly, there are minimum requirements, but if the will is present, much can be made of seemingly meagre resources, and it is surprising how much under-used equipment can be found in a school.

The minimum requirements include staff who are qualified, machinery which is adequate, space which is appropriate, print and non print material suited to the needs of the school.

No hard and fast rules can be laid down, but experience suggests that staffing must be adequate from the start, to avoid a back log of work piling up, and that the accession and retrieval systems appropriate to the school must be selected as early as possible. The rest will follow as needs become obvious.

The important thing is that no school should start a Resources Centre just because it suddenly becomes fashionable. It <u>starts</u> as a state of mind, and the idea grows, develops and matures until it is seen as the logical outcome of an examination of educational philosophy. Thus it has become as essential, as necessary, a part of the school's system of education as any other educational provision and takes its rightful place in the order of things.

A.H. Malcolm.

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Philip Featherstone, *Director of Resources, Wakeford School, Havant, Hants.*

*Ten form entry Comprehensive School opened 1968 with first-year pupils only. Resource Centre concentrates on developing inter-disciplinary enquiry-based courses which rely heavily on learning materials produced within the school. The curriculum is divided into six areas, each staffed by a team of teachers led by a co-ordinator. The Resource Centre consists of libraries of books and audio-visual materials. It is staffed by a director, a technician, a half-time secretary and one other teacher seconded from the rest of staff. In addition, the school received voluntary help from parents and other adults.*

There has been, in recent years, such a concentration of projects, lectures, case studies and conferences around and about resources and resources centres that one forgets what a comparatively new concept, in British schools at least, the resources centre is. A cursory glance through the back numbers of the leading educational journals reveals no references to resources centres before December 1967. This is not to say that references before that do not exist, but I should be surprised if there were many of them. Indeed, when I opened a school resources centre early in 1968 the difficulty of finding other schools with active centres that I could visit led me to believe that the centre in my own school was among the first. Of course, many individual teachers and librarians in all spheres of education had for a long time been doing what now goes on in resources centres, but the term resources centre implies some degree of organisation and management of learning aids within an educational community as a whole.

Since 1967 developments have been rapid. Early ideas have quickly dated. There are now schools with purpose built resources centres. Some others have managed to adapt and extend existing accommodation. Many institutions in the higher education field, especially colleges of education,

have not only developed their own resources centres but are making their sophisticated facilities available to schools in their areas. At the same time there has been activity at both regional and national levels, and some people are now seeing the possibility of fusing organisations at various levels into a tiered system of resources provision.

In short, resources centres are 'in', and many schools are establishing them. However, the range and variety of learning aids and materials, the rather esoteric language surrounding resources centres, the difficulty of obtaining practical help and advice, and the sheer immensity of the task of establishing a resources centre in even a small school often combine to produce bewilderment and despair. It is probably a symptom of this bewilderment that many discussions about resources centres bog down in trivia, and the present paper is intended to be a response to it. It does not set out to offer a case study of a particular centre. Valuable though case studies can be, they do have two main dangers: they can have the effect of inhibiting action rather than stimulating it ("It's all right for them. They have more staff/space/time/brighter kids/more money/etc. etc. than we have."), and they can imply that an organisation worked out to suit one school is being recommended for general adoption. A resources centre is an organism, constantly developing, modifying, changing to meet the needs of the school it serves. It is difficult for a case study to place proper emphasis on this dynamic aspect of the resources centre. I therefore propose to offer a pot-pourri of general principles, remarks and advice based on my own experience of running a resources centre and on my observations of the work of others in the same field.

There is often some confusion about what exactly a resources centre is. Some schools use the term to express the notion of centralisation of audio-visual equipment. Others think of a resource centre as a sort of glorified teachers' workroom crammed with reprographic goodies. I know of one school in

which the resources centre is a collection of non-book materials totally separate from the library, and in a large comprehensive which I visited, the resources centre was being developed to serve a single department. Of course, there are mixtures of any or all of these functions, with some additions.

Perhaps part of the problem is the very vagueness of the word 'resource'. What is a resource? What is a learning resource? Is it different from a teaching resource? And if so, how? The Shorter Oxford Dictionary gives as the primary meaning of resource ' a means of supplying some want or deficiency'. (Incidentally, resources are defined as natural assets, so from now on I shall use resource centre in preference to the rather more popular resources centre). A learning resource, then, is something which supplies a want or deficiency in the learning situation: a book; an audio-visual aid and the equipment to use it; a picture, map, pamphlet or document. So far, so good. But what about apparatus and artifacts? Surely these are just as much means of supplying wants or deficiencies in the learning situation. And how about paper? scissors? paints? glue? modelling materials? These fit our definition, but few people would argue that they are within the province of the resource centre. All the items in the first list could reasonably be assumed to be the responsibility of the resource centre, but apparatus and artifacts are probably more appropriate to the subject department while stationery may be provided centrally by some other agency.

It matters little to the individual teacher what learning resources are provided by the resource centre and what by his own subject department. The important thing is that they should be provided, and the head of the resource centre and the head of the subject department will need to agree upon demarcation. As Director of Resources I know where the resource centre's responsibilities end and the Geography Department's begin, but does the Head of Geography agree with me? And having reached agreement with him, will the same arrangements

meet the needs of History? Some overlapping is necessary, but these agreements with departments have to be worked out with care and need to be clearly stated and understood. Otherwise there is a danger of confusion, waste and muddle. The possibilities of unnecessary and wasteful duplication apply particularly to books, and decisions have to be made about the resource centre loan and reference collections, and their relationship with departmental libraries. Provided that the necessary staff and space can be found, a strong case can be made out for centralising the provision of all books, including sets of text books, in the resource centre. Books would then be lent to departments, those in constant use being permanent loans which would only return to the centre for stock checking and repair. Whatever is decided about which books are kept where, the bulk of the learning materials in the resource centre will be in book form. For the majority of children the printed word is still at the centre of the learning process and is likely to remain so. Given the importance of books, and the fact that school libraries have for some time been doing part of the job of a resource centre, it seems logical to use the library as the root from which provision of other learning resources can grow, and to integrate collections of books and non-book materials. One of the aims of a resource centre is to bring cohesion and unity to the provision of learning resources, and the separation of different media in isolated collections is in conflict with this. Surely, what we should be aiming for is a situation where the same material is available in a variety of media, from which the teacher can select the one most suited to the skills, aptitudes and development of the individual child. The criteria for selection are not merely the distinctions between academic and non-academic, between visual and verbal symbol between aural and written comprehension. The teacher must use his intense personal knowledge of the child in selecting and devising materials. This implies not only a large store of materials with the facilities for trying them out and for making new ones, but also demands that there should be an efficient

system for informing the teacher of what is available both inside the school and from without.

The problem can be stated quite simply. There is a vast range and variety of commercially produced learning materials (including books) available. Every month there are enormous additions to what has already been published. The output of Schools Council projects alone is enormous. There is a great deal of material which can be obtained free, on hire or on loan from industry and commerce organisations, societies, embassies, and so on. The school will probably be producing its own materials too. The resource centre must inform the school's staff of what is available both within the school and without, and must maintain its collections of materials in such a way that items can be found, and found quickly. At the same time the resource centre relies on the subject specialist to keep up with new publications in his subject, evaluate them, and recommend purchases. Information must pass freely and smoothly both to and from the resource centre. It cannot be assumed that such a flow of information will just happen. There must be a structure, clear and easy to operate, if communications are to be maintained when people are busy or under pressure.

One of the most valuable resources, and at the same time one of the most difficult to tie up organisationally, is the 'human resource'. Many schools have excellent links with the communities they serve. Local people and local organisations are being increasingly drawn into the processes of education, and the outward looking, environment-based courses which are now provided at all levels not only demand an initial awareness of local resources but also have as a product the identification of new ones. Teachers and pupils involved in these courses quickly become knowledgeable about local resources, collecting details of interesting people and places in the locality. Teachers learn where to send pupils for particular educational experiences. Pupils often have a

knowledge of local characters who can be of interest to the school. This feverish local exploration must be recorded and coordinated and it is the task of the resource centre to devise systems for extracting information and recording it. At the same time its use needs to be recorded to avoid over-using people and organisations and quickly exhausting the goodwill which many schools currently enjoy. Recognising the need for centralising the recording of local resources, some schools have integrated the resource centre with the careers department. It is true both benefit from working closely together, but to merge the two is to risk blurring the important distinction between the pastoral-care function of one and the curriculum function of the other.

The effectiveness of communications between the resource centre and the rest of the school will largely depend on the quality of relationships within the school. The resource centre relies on the pooling and sharing of knowledge and experience, expertise, materials and equipment. Sometimes a resource centre is a product of the sharing which is already happening in a school; sometimes the resource centre is deliberately established to stimulate and foster cooperation. Whatever happens it is unlikely that many resource specialists will be lucky enough to encounter no opposition to the establishment of a resource centre. There is in the teaching profession a long tradition of independence - or to put it unkindly, possessiveness - over materials and equipment. A projector is thought of as the Geography Department Projector or the Science Department Projector, and heaven help anyone outside that department who tries to get his hands on it. Mercifully this attitude is disappearing as classroom doors open and teachers see themselves less as individual dispensers of education and more as members of a team. However, there is still some resistance to sharing resources, and not only from members of the "old guard". The head who made his staff pile up all their materials and equipment in the assembly hall as the only way of discovering what resources the school possessed was showing more thoroughness than tact. Coercion may be needed, as a last

resort, but only after the possibilities of stealth, cajolery and guile have been exhausted.

Of course, like communication, sharing will not happen unless structures are provided and positive steps taken to bring it about. Teachers who are reluctant to share are usually so because they have had bitter experiences of damage to or loss of equipment and materials they have lent to colleagues. It follows that if these teachers are going to be persuaded to cooperate with the resource centre they must be confident that what they hand over will be carefully looked after and will be available when they want to use it themselves. Trust takes time to establish. The resource centre must, therefore, be able both to find things quickly and to maintain them in good condition.

This statement, simple though it is, has enormous implications for the staffing of the resource centre and for the systems it uses to retrieve the materials it stores. Indeed, it is no exaggeration to say that these two factors - adequate staffing and reliable retrieval - are vital to the success of the centre.

Neither staffing nor retrieval can be considered in isolation. Both need to be seen as part of the web of inter-relating strands which affect the whole resource centre. As well as being closely connected with staffing, retrieval is also affected by questions of space and storage. It is obvious that the resource centre will need to keep some sort of list of materials available in the school. If the centre is growing out of an existing library these lists will probably follow the Dewey System, and the materials will be stored according to their Dewey Classification numbers, but it soon becomes clear to anyone working in a resource centre that the Dewey System has severe limitations. Once an item is classified under Dewey - or any similar system - it tends to become 'stuck' and its relevance to other subjects is not immediately apparent. Then there are books which deal with a variety of aspects of a subject. There is

the problem of classifying photographs, or an audio or video tape which may contain several diverse items. Another disadvantage is the unfortunate way the Dewey System separates items which should go together. An example of this is the 19th Century distinction between 'pure' and 'applied' science. Neither is the Dewey System much help in resourcing the thematic studies popular in many schools. These drawbacks have caused some schools to search for other, more sophisticated, classification and retrieval systems based on lists of numbered 'concepts' and holes punched in cards. Such systems can be helpful, and we are adopting one in my own school, but in view of the enormous interest those starting resource centres usually show in such systems, I feel obliged to offer a few words of warning.

We require of a retrieval system that it should be fast, cheap, accurate, reliable, simple, easy to use and maintain. We also desire it to have an educative function, leading an inquirer to themes and materials of which he would not otherwise have become aware, and pointing out associations which he would not have considered without the help of the system. It is expecting a lot from a numbered list and a few holes in cards if we expect all this, and the above list of requirements is not exhaustive. The system will be of value only if it is reasonably comprehensive, which means that a lot of time has to be spent on catching up with the backlog of materials before there is any sort of pay-off. The system can function only when an enquiry is made in its own terms, that is, using its own vocabulary. There must, therefore, be built into it the ability to channel an enquiry made in the wrong terms into the right ones. The concepts themselves need very accurate definition. For example, if both 'war' and 'violence' are two of the concepts it must be clear to those using the system, as well as to those classifying materials within it, where one ends and the other begins. Merging two such concepts together solves the problem, but at the cost of loss of precision. The point I am making is that none of these systems - whether OCCI, EPCR, or anything else - can be thought of as a

universal panacea which will magically cure all retrieval ills. The adoption of a concept system will create more problems than it will solve unless its capabilities, limitations and full implications are understood. The components of the system may be cheap, but the cost in terms of time involved in setting it up is colossal. It would be a serious mistake for a resource centre to embark on such a system without being assured of the staff to establish it and maintain it. Moreover, there are many activities which can occupy more profitably the time of resource centre staff. It is a nice task to try to balance the value of ten minutes spent discussing resources with a teacher or a child against the value of ten minutes spent on absorbing stock into a concept system.

However good the staff relationships are in a school, however fast and efficient the resource centre retrieval system, and however carefully structures for communications and sharing are provided, the attitude of the individual teacher to the resource centre will ultimately depend on how useful he finds it in his own teaching. The resource centre will presumably offer a number of essential facilities and services, especially in the fields of reprographic and audio-visual equipment. It will also help if the centre has control over spending on equipment and materials and can draw staff into discussions about selection and suitability. It is a truism, but none the less valid, that the more a teacher is involved in developing the centre the more he will use it and the more useful he will find it. In my own school we operate a scheme whereby teachers take it in turns to work for a week in the resource centre. During the week they are relieved from all teaching commitments and spend their time acquainting themselves with the facilities and services of the centre, trying out new techniques, creating materials, and working on some aspect of resource centre development. Especially useful is the opportunity the teacher has to take an overview of the way his subject is being taught and to think about how the resource centre can help in solving learning problems he has encountered in his own teaching. I can claim no originality for this excellent

scheme, which I believe was first operated in a school in the Midlands.

Of course, a week is not nearly long enough and it takes a long time to work through a large staff. Other structures have to be set up to facilitate links between resource centre and teacher. Teachers can be time-tabled to spend one or two periods a week on resource centre supervision. Workshops and preview sessions can be arranged, departments can be encouraged to give one of their members special responsibility for departmental resources and for liaison between department and resource centre and staff groups can be involved in decisions about acquisitions and development.

Periodically staff meetings should be devoted to consideration of the school's resources organisation, and teachers should be encouraged to say what they feel their own subject needs from the resource centre, where the centre is helping them and where it is failing them.

The scope of the resource centre in the secondary school is wide. It provides a range of materials, equipment and facilities for using them and for making new ones, together with the necessary back-up of advice and assistance. It makes links useful to the school with the outside community and with external resource services. It fosters a two-way flow of information by disseminating new ideas and techniques and by encouraging the pooling and sharing of knowledge, information and experience. It runs in-service training programmes and workshops. It permeates the whole curriculum and improves the efficiency of everyone in the school. What sort of staff is required to run this magnificent enterprise? And how many of them are needed?

There is no doubt that adequate staffing is the key to running a successful centre. Without sufficient staff the organisation will never reach its full potential and the pay-off will be small, out of proportion to the efforts of those involved, however hard they work. If there is a choice between spending

money on people and spending it on equipment there is no doubt in my mind which would bring most benefit.

Similarly, I have no doubt that the senior position in the resource centre should be filled by a teacher rather than by a librarian. The function of the resource centre is primarily educational, and should be in the hands of an experienced educator. The amount of time the teacher-in-charge can give to the resource centre will depend on the size of the school. In a large school he should not be time-tabled at all, or at least should be sufficiently free from regular classroom commitments to allow a great deal of flexibility in the way he organises his time. He must be available for instant consultations. He must be able to spend half a day helping a department with its resourcing problems. He must have time to make and develop these links with the local community which are so important, and to locate other sources outside the school. He needs time to think out the future development of the centre. Such a person is in a unique position to take an overview of the school's exploitation of learning resources and to advise the head and heads of departments. These responsibilities will be reflected in the status and salary of the post.

Even small schools will require at least one ancillary assistant in the resource centre. In a large resource centre the problems of classification, cataloguing and retrieval are complex and should rightly be the province of a full-time chartered librarian. An audio-visual technician will also be required, and if the school is producing its own printed material in quantity a technician will be needed to operate reprographic machinery. In addition the resource centre will need a clerk/typist skilled in the clerical work which is vital to the efficient processing of materials and recording of information.

This is a complement of five full-time staff - one teacher and four people

with other skills. If possible another teacher should be attached to the resource centre and given extra time to help, especially with the production, in-service training and staff relations aspects of the centre's work. At present most schools and local education authorities do not realise the potential of a properly staffed, properly equipped and financed resource centre and they are unwilling to provide a staff of this size. These manpower requirements are not excessive, though, for a large school producing a lot of its own learning materials. Smaller schools will be able to manage with a smaller staff, but it should be remembered that the eventual quality of the coat will depend on the cloth that has gone into it. Many schools, my own included, receive help from parents and older pupils. This is valuable and is highly appreciated, but it can never be a substitute for full-time paid ancillary assistance.

Learning resources are crucial to the success of modern teaching techniques. I would go so far as to say that there is a direct link between the resource centre and the quality of teaching throughout the school. There is no doubt that the sort of organisation I have been considering in this paper demands much in the way of staffing, space and equipment, but such a resource centre appears expensive only because the financial benefits of a saving in teacher-time are hidden. From the school's point of view they are hidden because the cost of a teacher does not show up as a charge against capitation. From the point of view of the L.E.A. an increase in teacher efficiency cannot be measured and does not show up on a cost analysis. Schools, like most organisations, are compelled to see distant ideals blurred by the obscurations of the immediately feasible and the eventually attainable. Cost is not the only restraint on the development of a resource centre. Time, space, staffing, location of accommodation, and money assume varying degrees of importance from place to place as well as in the stages of development of a single unit.

Despite these restraints, one thing has become very clear. That is, the

enormous potential for change there is in the resource centre concept. It is the most powerful tool we possess for innovation and development in the secondary school. A resource centre acts simultaneously as both cause and effect of curriculum liberalisation, a paradox which will be clear to anyone who has experienced the curious way in which the commitment to establish a resource centre is both a response to a need and a stimulus.

Resource centres are still in what one might call their 'first generation' of development. We all, even those who have been working in resource centres for several years, have a great deal to learn about the techniques of their management. Not only that, but the revolution in learning resources has not yet been with us long enough for us to foresee all its possible effects. Given better and more learning resources, we are still subject to the law that education is as good as the teachers who provide it. We learn fast, but there is a long way to go before we are exploiting to the full the resources available to us.

Philip Featherstone.

Basil Lewis, *Headmaster, St. Peter's Church of England Primary School, Tunbridge Wells, Kent. Seven-teacher Primary School.*

Resource Centre at St. Peter's C.E. Primary School, Tunbridge Wells

Like so many other developments in education, our Resource Centre at St. Peter's C.E. Primary School, Tunbridge Wells, came about by accident, which makes a deep, philosophical exposition rather difficult. It all started in 1958 quite simply. I was the only man on the staff of this 7-teacher school, so the newly-acquired tape recorder, the filmstrip projector together with their associated software became my responsibility. Two years later I was also saddled with the school's 180-volume central library. However, as our 6 classrooms were all rather small, the Head allowed me space in a little-used stockroom to lay out the books, filmstrips and tapes. Thus was born by chance the nucleus of a multi-media Resources Centre, although we didn't know for another 7 years that that is what it was.

Gradually the school's stock of material was built up, until by 1962 it became necessary to catalogue everything, not merely for stock purposes but for ease of retrieval. Once some system had been introduced, we anticipated, correctly as it turned out, that teachers and children would look for material themselves instead of relying on memory. At the same time it was becoming apparent that there had been considerable duplication of book purchase in past years whilst some important fields had barely been considered at all. As soon as the material could be arranged in some logical sequence, these deficiencies would, we hoped, become more obvious and could then be rectified.

A visit from a County Inspector led to the adoption of the simplified Dewey system. No one at St. Peter's knew anything about cataloguing or library procedure so we decided to copy the local public library. They used a card index - so we did; they used Dewey for shelf arrangement - so we did too.

Most of our material we found easy to catalogue, but when in doubt we merely checked the shelves of the public library. This had the great advantage that once the children knew where to find books on a particular subject at school, they could find the same subject in the town and county libraries, and vice versa. Even today we find that this is a key factor in our continuing to use Dewey.

In 1964 the arrival of a new Head teacher coincided with increasing pressures on money and space. To save money, all consumable stock was centralised. Incidentally, this helped the Head to control the introduction of new ideas, for example by withdrawing all lined paper and replacing it with unlined paper. Because only stock in current use was held in the classrooms, most of the cupboards could be removed, and this in turn created more space. Open working-top shelving was fitted round the walls and each class's remaining stock, such as books, and paint, was stored on undershelving. The open aspect of each classroom with everything visible and accessible largely overcame most teachers' natural inclination to hoard against a rainy day, and thereby created a mobility which later became crucial. Not only did material quickly become "common user", but also teachers and children alike learned to share the school's goodies. All this coincided with an easing of the County's stocktaking regulations. When the cupboards were removed, a large number of books, long-forgotten filmstrips, and quantities of posters and pictures were unearthed. These greatly enlarged both the size and range of our growing multi-media centre, and with an increasing amount of project, topic and thematic work being done, the centre was well used.

Right from the start it had quickly become apparent, much to our surprise, that both teachers and children responded well to the trust put in them by having all material easily accessible on a "take what you want when you need it but put it back when you've finished with it" basis. It was also obvious

junior children were perfectly capable of many things which hitherto had been the teachers' responsibility. These ranged from cataloguing material to operating the machinery. This factor also became important in later years.

In 1967 I took over as Headmaster and once again found the school faced by further pressures on space and money. Following my predecessors' example, I removed all the remaining cupboards, but this time sufficient space could be obtained only by removing walls and partitions as well - which is how in 1967/8 we came to have open-plan areas with co-operative teaching. Inevitably this led to an increase in individual and small group working, and this in turn led to greater use of the centre. I must stress that this was the result of our solution to other problems and was never an end in itself. With the introduction of open-plan working, a logical development of the earlier centralisation of consumable stock and resource material was the centralisation of other materials in various bays. Thus corners were created for specialised fields - maths bays with the school's entire equipment, science bays, reading corners, mess areas (for art and craft inter alia), music corners and A.V. bays in which the school's hardware was located. The space saved by all these manoeuvres, and the increased use of material - good cost/utilisation factors - solved most of our problems. Of course this type of rethink of a school's organisation could succeed only if the climate of opinion and experience in the school already existed. In this aspect I was lucky because the communal nature of life at St. Peter's was already well established.

One of the "corners" - the one with the resources - already existed but it was at this period that it acquired its name. By now however the old stock room was itself becoming jammed with material and the whole system of the school - visibility, ease of access and of retrieval - was in danger of collapse at this point. At the very least something had to be done about the card index which had a nasty habit of spilling out and anyway was growing

too large. We decided to change for retrieval purposes to a line index, using a simple colour code to denote the medium involved. A single 180° stand with 15 double-sided plates has proved quite adequate. I am well aware that an optical coincidence system would probably give more detailed information but most primary school books are comparatively slim and only deal with a limited range of material. The subject index lists only classification numbers except where the reference or title is particularly obscure. This seems to work, although in a school as small and intimate as St. Peter's, the grapevine is nearly as effective as the index. To create more space, all consumable stock disappeared into the office on to newly acquired industrial slotted shelving. A stock control chart and a display board of samples were put up to help identify and locate this stock - a parallel idea to the line index in the Resources Centre. Similar charts were designed for the other specialist areas.

Into the space thus released went numerous tidy boxes. For many years we had been accumulating odds and ends, travel brochures, newspaper cuttings, magazines and general consumable 'rubbish'. Using pupil and parent labour, we were now able to classify these roughly - though not to catalogue them - and they gradually disappeared into boxes. These were given Dewey classification numbers and located below the relevant book-shelves as well as being given a distinctive colour on the central index.

Sometimes we found children wanting to "consume" material which could ill be spared, whilst teachers introducing new themes frequently wanted multiple copies of sketch maps and diagrams. Luckily the introduction of a centralised stock system linked to a stock control chart had resulted in such saving of money that the school actually found itself with an unexpected surplus - but not for long. With the need obvious, the Resource Centre acquired a second-hand photocopier and a brand new heat copier from school equipment allowances, and a replacement duplicator from the P.T.A. Although

not all children can operate all machines, we have trained monitors to operate these reprographic machines without any difficulty.

In much the same way, by using cost/utilization and/or cost/effectiveness as the criteria for all expenditure, we have been fortunate enough to have saved sufficient money from capitation to have built up quite a reasonable quantity of both hardware and software for our Resources Centre. At the same time we have produced tapes, films and filmstrips in the school to meet specific needs and these too have been added to our collection.

Today we find ourselves with a Resources Centre containing, among other things, 2000 books, 250 filmstrips, 1000 slides, 100 tidy boxes, 600 posters plus the previous 12 months' output of BBC programmes deemed of likely resource use. All this is classified and indexed. Of course mere figures prove nothing. Nevertheless the Resources Centre is used heavily by teachers, children and even parents. We have however, never had 'Library' periods nor have any teachers constructed work specifically for children to do in the Centre. Instead it is used as a sound and reprographic workshop, as the references centre for the whole community of the school, and as a centre for individualised instructional material, such as remedial programme texts outside the normal syllabus. The P.T.A. are particularly heavy users of our reprography section.

Although in a sense one cannot have too much material, we realised some time ago that we were accumulating more than we were likely to require at St. Peter's, so three years ago we suggested to the Warden of the newly created Teachers' Centre that, pending the creation of a Resources Centre for the West Kent Division, about 120 schools, the St. Peter's Centre should be advertised as available to all Primary schools in the division. This was done and after some initial hesitation - no one believed that we were prepared to lend them our material or allow them to use our copiers - several schools have made use of this service. More important, some schools have decided to

start their own Centres, and about 1 in 8 of our Primary schools have already done so. During this coming term we hope to establish a proper hierarchy, with groups of Primary schools working together. Large local secondary schools will hold material too expensive for the primary schools. Thus whilst St. Peter's provides sound tapes, it is hoped that a nearby secondary school will provide video-tapes, for the linked schools. In the same way, the Teachers' Centre will provide the workshop facilities and even more sophisticated machinery for all the schools in the division. This hierarchy is only in embryo at present, but some parts of it already exist and function, particularly at County level where there are extensive film, disc and book libraries as well as advisory services.

This extension of our centralising or rather communalising approach throughout the whole structure of our authority is both logical and necessary. It is necessary because we cannot reasonably continue to spend our over-stretched finances on duplication or under-utilised machinery. Where else than in education would you find equipment used for only one 8-hour shift in a 5-day week of a 40-week year?

I have dwelt at length on the history of our centre in order to show the reasoning behind each stage of its development, and to try to set it in context. Our Resources Centre was born by accident and nurtured by a desire for economic efficiency. It was an integral part of a total rethink of the use of space and material in the school. Implicit in this was a change of attitude on the part of teachers to each other, and of teachers to children. Mobility and trust became our unofficial watchwords; hoarding became our enemy. Prevention - open-access shelving - was preferred to cure.

How then has this attitude of mind been received by staff and pupils? To help answer this perhaps I could now describe St. Peter's and put all this properly in context. Ours is an 1878 building with 6 classrooms on one site,

a small asphalt playground 100 yards away down the road and past the houses, and an 1853 hall-cum-canteen 400 yards away on a third site. The children have no field available so that we have always felt a need to provide as stimulating and bright an environment as possible in the school itself in view of our odd layout. Indeed the Resources Centre has wall-to-wall carpeting, and, like every classroom, has decorative curtains on the windows, and a profusion of indoor plants.

As it happens, some 20% of our children come from broken homes, several from Dr. Barnardo's and many more from poor environments. The school is laid out so that all the children can handle things freely, and they take a pride in being allowed this freedom. Many years ago the Head Teacher of the day laid down certain precepts - that the teachers should try to show trust in children in order to develop the latter's sense of responsibility and their self-reliance; that given proper instruction, Primary children could be trusted to operate machinery safely and were no more likely to break things than adults; that children could learn from a variety of media, and could reproduce work in media other than the written word.

These proved much harder for the staff to accept than the children to live up to. Every lapse from grace led to an 'I told you so' but the Head persisted. Lapses decreased - our loss-rate on books is less than 1% per annum and we have no check system on books kept in school. No apparatus from our collection of 12 tape recorders, 3 projectors, synchrofax and others, has ever been wilfully damaged.

Over the years the staff has changed but newcomers are always shown what to expect and soon learn. It is sometimes a traumatic experience for teachers to find nine-year-old children disappearing into the Resources Centre for information for perhaps a group discussion and re-appearing with a tape or slide

presentation which they then proceed to load on the appropriate machine for study. It takes time to realise that these are the children and the machines of the period, and it is probably no coincidence that the average age of the staff is in the upper forties. Young applicants have often told me that they neither had practice nor confidence to allow children this freedom.

One small problem has arisen over this freedom; our secondary colleagues frequently tell us that children from St. Peter's do have initial difficulties at their schools because there they are denied this degree of responsibility until they reach the sixth form. As more and more local primary schools begin to work along similar lines - many already do - and as the divisional hierarchy develops, we anticipate a change of attitude from our secondary colleagues!

For many years the school has used filmstrips, television and radio for teaching, and with the growing change in primary schools to an emphasis on learning rather than teaching, the teachers required little persuasion that children could learn from a variety of media. It was then an obvious step to have a multi-media reference library, and although this had developed anyway, there was no need to pressure teachers into allowing children to use it. Nor is our staff in any way unusual - a third are Scots! They do however realise that in the world of today there are very many subjects which interest children about which they know nothing. Space travel, foreign countries in hitherto remote areas and modern manufacturing techniques are typical of this.

The existence of a Resources Centre has not in itself made any difference to the syllabus of the school but inevitably it has broadened the possible angles of approach in almost every part of the curriculum. However it is part of the school's general philosophy that we adopt a workshop approach to learning - Piaget-style? Doing and Creating become therefore important activities in the Resources Centre, as they do in other bays.

From my limited experience as the Head of a small Primary school, I have concluded that anyone with a centralised book Library can easily turn it into a multi-media collection. I don't believe that there are any undue problems in cataloguing, organisation or storage which professional expertise or amateur ingenuity - plastic drain-pipes to store posters - cannot overcome if the spirit is willing. There can be no question of cost because in our experience a Resource Centre actually saves money, by avoiding duplication and increasing utilisation. There need be no problem about acquiring material - just empty your cupboards and classify what you find so that everyone knows what's there. Space need be no problem. One of my neighbouring schools persuaded the P.T.A. to put up a small out-building; others have used cloakrooms; one village Head converted part of the school-house. If all else fails, spread the material and machinery round the school, so long as the retrieval system is central, complete, and includes location. Above all, have a Resource Centre only if the users can have free recourse to it.

I have been asked on occasions what I would do in a larger school, a new school or even in a secondary school. I honestly don't know. Our system is tailored to our situation; it reflects our pre-occupation with economic efficiency, educational effectiveness and relevance to the time in which we live. These principles I would apply anywhere but I'm not sure that next time I would have a room labelled 'Resources Centre'. In my world a Resources Centre is largely a state of mind.

Basil Lewis,

Patrick Smith, *Director of Resources at The Resources Centre of Wreake Valley College, Leicestershire. The establishment of a resources centre in the college arose from a three-year co-operative programme between Leicester City and Leicestershire County to explore the use and development of resource materials. This was the Curriculum Resources Development Project under the directorship of Emmaline Garnett. Details of this project are published in "Area Resources Centre: An Experiment" by Emmaline Garnett, published by Edward Arnold* at £1.70

Wreake Valley College opened in August 1971 and is the latest Leicestershire Upper School and Community College. It opened with 790 pupils aged 11 to 15 plus, and in the second session the number of pupils has risen to 1150, aged 11 to 16 plus. The third session will see its maximum number of pupils, around 1400, aged 11 to 18 plus. There are future plans for a High School on the same campus which will accommodate the 11 to 15 year olds, and the College will then be for the Upper School pupils, aged 15 to 19.

The first and second floors of the building surround a central library resources area which includes the library, its gallery and offices for the librarian and audio-visual technician. In practice most of these rooms are used by the Humanities and Languages Departments. With mixed ability groups in all subjects there is a tremendous demand for materials which can satisfy the differing needs of pupils and which staff feel are appropriate. Thematic approaches, particularly within the Humanities Department, also demand materials which cross existing subject and discipline divisions might well be housed suitably within any two or three departmental areas of the College. In order, therefore, to make these materials available there is a need either to centralize them or to have some central catalogue or index which lists them. The same also applies to ideas, equipment and information which, stored centrally and indexed properly, can be "immediately available" to enquiring staff or pupils.

This means establishing a centre for this type of provision and staffing the services which are necessarily involved. The resources centre can also centralize the buying of books, materials, and equipment, thereby obtaining better discounts and avoiding unnecessary duplication. It has a role as a liaison agent between the school and the local services provided by libraries and museums, co-ordinating bookings and providing staff with the necessary teaching/learning materials, without the usual clerical burden of booking in and booking out which normally falls to the teacher.

In establishing the Resources Centre at Wreake Valley College we laid heavy emphasis initially on the provision of adequate support services for staff. The services were designed to remove many of the clerical functions which normally demand from staff, a great deal of time which could be better spent on the preparation of work. We were eager to try to find what role the concept of resources based learning had in subjects other than those in the sphere of the humanities. Too often it seemed that resources centres in schools service the needs of this area of curriculum only, while areas such as mathematics, design, science and languages have to make do as before. In order to justify the commitment to the Resources Centre in Wreake Valley we felt that it had to take account of the needs of all departments and seek to work for them all. In that way it would become sensitive to their ideas and goals and gradually reflect the ambitions and objectives of the whole College.

We established a number of basic support services and tried to ensure that the procedures which necessarily accompanied them were simple and flexible. Without experience we could have little other then hazy guesses as to what was suitable and which provisions would prove to be of invaluable help to staff. If we were to establish a resources centre too permanently then, very quickly we would be strangled or restricted in our development by the machinery we had designed. Services had to be capable of modification and adaptation and

readily accessible to staff. What is more, they had to work, and work quickly and efficiently. We concentrated our efforts on the staff and made a point of always welcoming and helping pupils who came along, knowing that if the Resources Centre provisions were of any use pupils would quickly learn of them and make use of them. The rest would be done by word of mouth.

The Copying Service was one of the first established. Staff could drop work in to be copied, and pick it up at a future date; we usually asked for five days to do it in. Work could be copied either in very small numbers, twos and threes, or in thousands. The Resources Centre undertook wherever possible to clear any existing copyright. This latter aspect proved to be extremely time-consuming and delaying, but we have tried to follow our own stated intentions throughout the first year and into this year. Having established the Copying Service we quickly became almost inundated by requests for it, and between August and Christmas 1971 completed over 1200 separate jobs, ranging from the turning out of staff worksheets to more ambitious booklets which involved printing illustrations and sections in colour, and possibly clearing copyright from three or four publishers.

By centralising the resources production we can group expensive and sophisticated reprographic machinery in one place and provide staff having full cognizance of its possibilities. This quickly results in rising standards of lay-out and content as the staff see the results of each piece of work. The same applies to the services providing for the Off-Air Recording of both audio and video programmes. Staff quickly learn to manipulate the medium to their own ends and then demand additional facilities for using these programmes with pupils. The Off-Air Recording service was in extremely heavy demand from the onset and with a fairly limited number of video tapes we were soon in the position of having to juggle to keep programmes for as long as possible before recording over the top of them. Again, having a member of the

Resources Centre staff fully aware of the potential use of the equipment, and able to provide a very high standard of production, proved its worth, and a number of staff quickly became eager to learn about the various media and how to work with them.

The Information Service we established sought out information which staff required for work on which they were engaged. This service has proved to be an extremely useful one, but is time-consuming. Sometimes requests for information can be answered quickly from reference or catalogue sources within the College, but often they involve telephoning information sources locally or in other cities. A London telephone directory is essential as one of the reference books for this service as it can save both time and expensive telephone calls. The requests for this service fall into one of two main areas:

1. Immediate information

   "Where can I get information on the North Sea oil drilling operations?"

2. Reference sources for the planning of future work.

   "I'm doing something next term on minorities in society. Do you know any contacts who have information/pictures of travellers and gypsies? I really just need to talk to someone at this stage?"

The second illustration also makes the point that a good knowledge of local resources, in either personal, topographical or historical forms is also essential. Often, detailed knowledge of a particularly specialised nature is held by staff or pupils, without many people knowing, and this can be tapped and used. With 1200 people of varying ages all concentrated for seven hours each week-day in one building you do not have to look far for specialised knowledge, interest or experience.

Perhaps most typical of the services operated by the Resources Centre is that for film co-ordination. It was initiated as a direct result of confusion

between ourselves and one of the sources of free loan films we frequently use. Unknown to each other, three teachers in one department, had ordered the same film for use in the same week, but on different days. Had the situation not come out into the open, that film would have travelled out and back from its source to Wreake Valley six times in one week. As a result, we established a Film Co-ordination service whereby staff pass on copies of bookings to us and we display the titles of films booked, and the member of staff using that film under one of two columns, either ON ORDER or IN COLLEGE. As a film arrives it is checked off and the card for it moved from the ON ORDER column to the IN COLLEGE column. The advantage of this system is that anyone can see at a glance what films are, and will be, available within College and the dates when they will arrive.

We operate about 12 services within the College and act as co-ordinating agency for some four or five other services used by staff, which have their bases either in local libraries or museums. At present we are thinking out some method of displaying in an easily read form, what programmes, audio and video, we are currently carrying on tape, and how long they will be available.

Experience has shown us that if a service has any relevance to staff and pupil demands it will quickly expand to the limit of the staffing we can provide to operate it, and, obviously the greater the number of services which are provided, the more acute the staffing problems become. However, by establishing these services as flexibly or loosely as possible, we are able to accommodate pressures and demands which would in more rigidly established situations prove fatal. We have found also that one has to be ruthlessly realistic about the worth of the services provided. If they are not really being used, then their existence cannot be justified. We are fairly fortunate in the staffing allocation of the Resources Centre, having started in 1971 with 3 full-time staff and now having an additional 3 part-time staff. This

does not mean that we are generously over-staffed as a school, but that by centralising the resources commitment we can also centralise much of the clerical assistance. We have also been fortunate in having the voluntary, unpaid assistance of parents who come in each week for half days and provide invaluable help with clerical and secretarial work in a variety of ways.

With the emphasis, in our first year, on the establishment of services, we are seeking in this second year to provide a central index to all the materials produced within the College. Initially we considered the establishment of a retrieval system not to be a priority, especially as we would not be in a position to forecast, with any real degree of accuracy, the form that the index should take. Again we wanted to identify the elements of the situation and then be in a position to create a retrieval system which was capable of change and which suited our own peculiar needs.

As a result of this thinking, we established a system of theme and subject-based holding boxes which we called the Topic Collection. Items relevant to the boxes were dropped into a tray and Resources Centre staff then filed them in the Topic Collection boxes. Cuttings from newspapers make up the bulk of this collection and as the staff demand for materials on particular topics grew, or as items were left for filing which had no box, so the number of Collection boxes increased. A main source of materials was pupils who had been involved in a particular project and who then deposited items which they no longer required. Another source was the system which we established to monitor newspapers and periodicals taken regularly by the College.

Clearly, such a system has limitations, in that an item might well be satisfactorily housed under any one of three or four headings, but it does enable staff and pupils to browse through a random collection, which is filed according to the concepts and ideas of a large number of individuals. It can easily be added to, and the titles of the boxes can just as easily be changed.

Items which are of little or no interest can be weeded out when it is felt they will never be used again. It is a haphazard and chancy method of collecting resource material, but its very roughness creates a versatility satisfactory to the staff and pupils searching through it.

The Topic Collection has also proved useful in identifying those areas of continuing curriculum interest which will appear regularly over the years in the work of departments. This has proved extremely useful in establishing the central retrieval system which has just come into operation. By operating the Topic Collection we were provided with the basic concept divisions for the Theme section of an optical coincidence retrieval system. We were able to modify this system in such a way as to accommodate our own particular needs. Items are indexed and filed by their accession number and can be discovered, either by using the optical coincidence method, or by following the more widely known Dewey classification. We felt it was important for staff and pupils, who were already fully aware of the Dewey system, to be able to find non-book materials easily by that system.

One of the difficulties in establishing the Optical Coincidence retrieval system is that of teaching staff and pupils to use it. We have tended to avoid this situation by operating it in such a way that, by having Resources Centre staff available, staff and pupils do not have to learn how to use the system, but merely have their requests serviced. Already many staff and pupils are asking to be shown how the system works and we are very happy to show them, but feel that it should not be essential for them to know. As materials are produced through the Resources Centre they are indexed, and booked out to members of staff who require them, so that when they have been used, they can be returned to the Resources Centre for storage. An example of each piece of work, or a reference to a particular tape, filmstrip or set of slides is being deposited in the relevant Topic Collection box so that staff and pupils are able

to browse through a box and see what non-book items are available. We have established a feedback system whereby we ask staff to fill in brief details of how particular items were used with what groups, and in conjunction with what other items of material. These details are then filed with the feature cards of the retrieval system for reference so that staff or pupils who use the material in the future can see who has used items of material and how they have been used.

The establishment and working of the retrieval system is still in its early stages and with the start of a new term the amount of work passing through the Resources Centre has reached tremendous proportions. As and when the term settles in, so the demand on the services will subside a little, and then we hope the retrieval system will begin to provide a starting point for those staff and pupils looking for materials. We want to consolidate the existing resources provisions and take an increasingly active part in the work of departments and the preparation of their curriculum core work.

From the first planning of the Resources Centre at Wreake Valley we have followed consciously the precept of hurrying slowly. It is no use establishing complicated procedures and collections of information or materials if this is done without constant reference to the ideas and capabilities of the teaching staff and the content of the curriculum. In that situation one ends up with a bureaucratic monster over which no-one has any view or control, and which has, increasingly, less and less relevance both to teaching staff and to the curriculum. The systems that are established must be flexible and capable of modification, or wholesale redesign.

There is a danger in the movement towards resources based learning in that there are answers to situations and problems which are universally applicable. Obviously there are certain rationale which generally apply - for example the

Micawber effect* governing the balance of input over output - but there is no general blue-print of what resources centres should be or what they should do. We are fortunate in working in a new building with staff who are eager to experiment with new ideas, equipment and materials and then to evaluate them honestly in the light of their content and effectiveness, but we do not have the advantages of longer-established schools in the having of pieces of equipment collected over the years, or long, traditional relationships within the community which can be relied on and used. We are in the position of having to create these relationships as we proceed, of having to buy wisely now in order to be able to service the demands of staff and pupils who are not yet in the College.

With the introduction of expensive and sophisticated equipment there is also the danger of falling into the assumption that this equipment will almost run itself. Even the most costly reprographic items, such as vacuum-head plate-makers and off-set litho machines, are only as good as the staff who operate them, and as good as the time allowed for them to work in. Experience over the last year has shown us the Resources Centre staff must be patient and adaptable and willing to become, however peripherally, part of the educational process which surrounds them, both with regard to staff and pupils. Just as there is a danger in seeing the machinery as being an end in itself, and in believing that there can be a blue-print for resources centres in schools and colleges, so there is a danger of seeing resources centres as holding everything centrally. It does not make sense to have to carry an overhead projector down three flights of stairs to where you are going to use it, every time you want to use it - very soon you will find good reasons not to use it. Similarly

**Emmaline Garnett "Area Resources Centre: An Experiment", page 78. Edward Arnold.*

there is no sense in lodging all materials for the Science Department centrally if that happens to be down two floors. It makes more sense to decentralise equipment and materials as much as possible whilst maintaining an index or register of items and where they are held so that others wishing to use them can learn quickly where they are obtainable.

Having established this complex of procedures and systems we have found that in the end it still boils down to asking people for help and obtaining it. This applies as much to the teaching staff in their relationship with the Resources Centre as it does to our asking teaching staff for help and advice. We have to be prepared to by-pass, and even to run counter to, our own systems occasionally to achieve results; and even to prove to ourselves that the systems are fallible and that we are all, staff and pupils, human and engaged in the intensely human activity of discovering and experiencing.

Patrick Smith

Adam H. Malcolm M.A., *Headmaster, Multi Media Resources Centre, Kennoway, Fife.*

The Multi Media Resources Centre opened at the end of August 1971. It was established, partly to provide places for a small surplus population at a local comprehensive, but mainly as a teaching development centre.

It was to have a small permanent staff, augmented by secondment from the secondary schools in the County. Teachers thus seconded would stay for one or two years then return to their original school, having gained experience which would enable them to act as advisors to their colleagues.

The pupils would come from the two local comprehensive schools, Kirkland High and Buckhaven High, each child in S1 and S11 coming for one morning each week. This gave a population of about 250, and a P.T.R. of 14.7 (against the county average P.T.R. 14.9).

The children were arranged by the parent schools in mixed ability groups of 10 boys and girls. The idea was that we should identify the children need -ing remedial help, and then in consultation with the parent school, provide tutorial situations to supplement the work being done already. This was not a satisfactory system, and the remedial situation is now quite different.

The introduction of comprehensive education has thrown up a problem, general throughout the country, in the first and second year, mixed ability class, situation. The formal teaching of subjects was no longer apposite, and new methods of continuing the education of the children had to be found. Faced with the problem, teachers have had to take a long hard look at their own philosophy and methods. My own look has convinced me of several things. First - conventional chalk and talk to mixed ability classes for a 40 minute period is not feasible. Second - concentration on one subject for 40 minutes is too much for a large part of the class. Third - the teacher centre situation is inappropriate and the emphasis must shift so that the situation is child

centred. Fourth - the child centred-situation demands much more teacher preparation of material, leading to what is virtually an individual learning situation. Fifth - such teacher preparation is much better done in a team writing situation. Sixth - the team writing situation leads to a blurring of subject barriers, which leads to an I.D.E. approach involving team teaching.

With these points in mind, the half dozen original members of the staff were briefed to begin, on June 1st 1971, writing worksheets on two themes "Fife" and "Flight". These were chosen because the staff knew a fair bit about them; because the source material was available; because they were acceptable to the feeder school; because they offered a reasonable chance of having material ready for August 26th.

The chance was a reasonable one, but there were difficulties. Not all the staff were sold on the idea; they were experienced subject teachers, but had never worked in a team; they were strange to the building and to the resources; they had only four weeks to produce the goods. It was a formidable task.

However by the end of the holiday, enough sheets were ready to ensure that the programme could begin, and, apart from short term difficulties caused by the presence of workmen, the system worked smoothly from the start.

As indicated above, the pupils were arranged in groups of 10. These were called "tutor groups" and put in charge of a member of staff called a "tutor". The emphasis was on the learning situation rather than the teaching situation. As well as being tutor to a group, each member of staff is an expert to whom pupils from other groups come for guidance. Thus a tutor who is a maths specialist, will send pupils needing help with a geography problem to a tutor who is a geography specialist and receive pupils who have maths problems. Children can be with their tutor for a whole morning, or be out and in a number of times. The tutor sees his group at the start of the day, after the morning break, and again before the children go to their buses. He has thus three opportunities to see the work being done and check that no pupil is spending too much time in any one subject area, or is bogged down in some problem.

It was thought that there would be difficulty with movement, since the children were free to go about the building as the worksheets required them, and we coined the phrase "Group Flow Movement" to express the notion of controlling the migration of pupils. One piece of planning in anticipation of this problem was to have an automatic telephone exchange installed, with 35 extensions, so that any tutor, faced with a large influx, could phone the Assistant Headmaster and have the surplus redirected. In point of fact, the situation seldom arose, and on the few times that the Print Library and the Technical rooms were overcrowded, it was quite simple to re-route the last comers.

Several experiments in Group Flow were set up. One team of tutors undertook to control all their pupils within the group, leaving the other two groups free to intermingle. They moved the children at stated intervals, which differed from one week to the next - a kind of fluid timetabling - but the movement did not mean that a child had to stop work on the part of the worksheet on which he was engaged. Another group noted the times of arrival and departure of their customers. Another kept records of the time spent on "subject areas". These experiments confirmed first: that free movement was practicable; second: that the pupil's time was spread fairly over the subject areas; third: that the pupils seemed to be actively working most of the time.

The writing of worksheets is an essential part of the work of the tutors. Three groups of tutors were formed, each containing as many different specialists as possible. These were writing teams, and usually worked with children who were following the theme they had written up.

A long list of possible themes was drawn up - anyone could suggest a theme, or a group could put forward a short list. This was reduced at a staff meeting by voting, and a list of eight or ten taken to the feeder schools for their approval. We had to have regard to several factors: the suitability of the theme to the age group; the acceptability to the feeder school; the adequacy of the resources available in the Centre; the experience of the writing team.

Once the themes were agreed, they were allocated to teams, who at once broke them down into topics, and produced some form of diagram to demonstrate at a staff meeting their proposed approach. At this meeting, any possible duplication was uncovered and prevented. It is remarkable how themes, at first sight, not promising as I.D.E. themes, do on investigation, allow cover of the subject areas. Such instances are "Bronze Age" and "Computers".

"Bronze Age" was developed because the prehistory aspect of "Fife" proved so popular, and demonstrates how a theme can develop from a subject area into an I.D.E. theme.

Fife is rich in Bronze Age remains and many cists have been uncovered in the locality. Making casts of grave goods found in these cists in aluminium - the cost of tin and copper and the high melting point of copper ruled out their use - gave work in the technical area. The sagas of Old English poems gave us a wealth of work in English. Tracing old routes and migrations gave us geography and history. Dyeing and weaving, cooking, baking and house building brought in science, homecraft and technical. Acting burial ceremonies gave scope in English and drama. Making and erecting standing stones and inventing games and family trees gave a wealth of maths, while art came, very naturally, out of all the aspects. Music was a necessary part of the religious, burial and marriage ceremonies, while history imbued everything. We did not attempt a modern language involvement, but no doubt more could have been made of Old English content.

"Computers" is maths based, but again there is a coverage of English, with poems and stories; technical, making puppets and drama using them; science, devising and building circuit boards; much art; some homecraft in making puppet clothes; and not a little language from the appreciation of precision in communication.

The team then allocated work, some members drafting sheets on one topic or several, or two people tackling several topics. The permutations are endless,

but the object is to have something on paper quickly so that discussion can start on the proposals. At this point, broad agreement is reached on the initial presentation of the theme to the pupils, "the starter", so that the materials can be ordered or collected.

The first drafts of the worksheets are "rough typed" with carbon copies distributed a day or two before the weekly team meeting, and discussed there in detail. It is not until members have reached a stage that they can be forth-right about each others' work that effective work is done. They must be ready to criticize and to be criticized. Now this is a difficult situation for any teacher to accept. For all his teaching life, when he has shut his classroom door he is King; his word is law; he is in command and it is unthinkable that his utterances should be questioned. In a team situation, he is among equals, a partner. It takes time for the reserve built up over the years to break down, and for constructive criticism to be effective. When that state is reached, and ideas flow freely, really good integrated worksheets emerge.

Perhaps several rewrites and shredding sessions are necessary before the final draft is agreed. It is then typed carefully, as nearly as possible to its final appearance, with spaces for illustrations. Red is used for instructions to pupils or for work which they have to do, and black for information. These sheets come to me as "editor" and I may make suggestions or alter phrases so that there is a general uniformity through the themes - a kind of house style. These are then approved by the group, or agreed at a team meeting which I attend. The agreed draft then goes to the typist responsible for cutting the stencils. She uses an IBM Selectric typewriter which has a variable head. This allows a variation of type face which helps to enhance the layout, but we are restricted to the few heads which will cut stencils effectively.

It is my contention that the worksheets should be of the highest quality our machines can give. If the pupils are given badly produced, ill-printed, tatty sheets then we have no right to expect good work in return. My aim is to have an offset litho machine, which should give us a result comparable with

letter press printing, and allow us to use the full range of typewriter heads.

There is an initial print of 200 for each sheet, and each theme has 40 to 50 sheets, so that we have a storage problem. Sheets are kept in cardboard boxes stacked in frames which we made in the Centre, and we intend to re-equip a conventional stockroom with mobile racks to make effective use of all the space in the room.

In addition to the group tutors we have several other members of staff who accept pupils without sending any out. Those are the art, technical, drama and lapidary tutors, and the print and non-print libraries also accept a considerable number.

Central to the whole concept of I.D.E. and team teaching is the provision of a Resources Centre. It must be central to the area where I.D.E. is in practice and must have a large stock of print and non-print material. It must have a first class retrieval system which allows the children "as instant as possible" access to the material they need. There are several retrieval methods in use at present, but we have chosen to use the ordinary 5" x 3" card index system using a title file, an author file, a Dewey file and cross indexing of subjects. If a child wants information on blue dogs with red tails in Scotland in 1920, he can find a list of titles from the cross index cards. Either the author or title card will give him the Dewey number, and so the shelf accession, as the shelf classification is based on Dewey.

As Resources Centre we have two rooms, one the former school library, the other a double classroom. The library with its fitments has become the "print library" and the other room, sharing the same landing, the "non-print library". The print library holds the written word and charts, the non-print holds the tapes, slides, records and so on, with the associated hardware. It has a separate index system, but this will soon be duplicated in the main index.

Both these rooms are very busy places, well used by the children seeking information and by the staff writing up worksheets.

Gliding has been an aspect of informal education in Fife for several years,

and the transfer of one of the instructors to the Centre gave us the chance to establish an Air Education Unit, using, and improving on, the existing facilities.

Every first year child in the Levenmouth area has had the opportunity of going up in a glider, of having the thrill of flying, the wonderful chance to see Fife as a peninsula, and to speculate on the whereabouts of his parents going about their affairs in the world far below him.

One of the courses prepared, when we expected an intake in June 1971, was one on field studies, and from that grew a first class Nature Trail in a nearby Forestry Commission forest block. This has been greatly used, mainly by Primary children, and visited by many teachers from all over the county. So great has been the demand for places that a second Forest Trail has been laid out, and is now in use.

I have gone into some detail on our work with S1 and S11 but we have been much concerned with S111 and S1V pupils who are not taking a certificate course, and have devised themes, using worksheets, suitable for them. There is a large content of practical work, and one theme has led them out into community involvement, helping Old Age Pensioners, who also visit the Centre and are entertained to tea.

As I have indicated above, our attitude to remedial education has changed. We are now asking for details of children needing help, working closely with the feeder schools, diagnosing learning difficulties, and offering possible remedies, while still giving a considerable amount of tutorial remedial assistance to children attending the Centre. The whole question of remedial education in the County has been opened up, and the tutor in charge of remedial education has his remit widened, and is now acting as part time advisor to the whole county.

While the Centre has a specific remit, it has functioned as might a school which has part of the population engaged for part of the week on I.D.E. It is my view that any school considering setting up a Resources Centre or examining the implications of I.D.E. will have to look closely at the weekly timetable.

How much time is to be spent on I.D.E.? How much time will be needed for reinforcement in subject areas? Will this time be spent on formal instruction in classes or sets or groups? What time will be needed for administrative purposes? Can "services" - art, technical, homecraft - accept pupils from an I.D.E. situation? At what stage must time be allocated for formal study of a foreign language?

It is my view that perhaps one half - certainly a maximum of two thirds - of the week should be spent on I.D.E. Registration, religious education, physical education, sports, assembly, social and health education and perhaps some formal work will demand a formidable part of the week. Blocks of a morning or an afternoon spread through the week will help balance the academic diet over the five days.

Acceptance by the school administration of the concept of I.D.E. is but the first stop. Then must come persuasion of the staff - or is it conversion? The Resources Centre must be established, staffed and stocked, with adequate reprographic facilities.

If all these things are done, there is no doubt that the reward will come, for the pupils will respond. They are involved, interested, motivated. They are building up a set of skills as well as absorbing knowledge. These skills - the ability to identify problems, search out answers, clarify conclusions, use retrieval systems, manipulate equipment - above all the ability to be independent, to be self sufficient - will stand them in good stead throughout their school days and in their further studies.

Adam H. Malcolm.

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RESOURCE BASED LEARNING: A RADICAL ALTERNATIVE

> 'My basic criticism of school is that pupils don't like it ... Apparently a boy is not supposed to have any natural curiosity for school subjects, and the way they are taught it is quite true. Attempts to induce learning by prizes, stars, etc., fail because learning is not competitive ... So, basically, make the subject a joy to learn, interesting and worthwhile'. S. (boy) 15 [1]

Only a casual glance at the press, particularly during term time, is needed to reveal the great restlessness that prevades education at present. It is evident at all levels: primary, secondary and higher educational institutions are infected with an unease and uncertainty that causes argument, dissent and threats of revolution. Nor is it just the teaching staff that voice this dissatisfaction. The anxieties of university pupils have been discussed endlessly, and now it is the turn of the older secondary pupils. The Schools Action Union has raised its standard.

It would be naive to claim that all the reasons for this state of dissent and confusion are the result of inadequate teaching goals and methods, but there are some common threads which indicate some connection. First there is a general distaste for the way in which authority is used, particularly in the context of dictating the subject matter to be taught and the manner in which it is presented. Many pupils are now seeking the opportunity to sit in with the teachers who are responsible for devising the syllabuses, their objective mainly to steer the topics to be taught to fields which they feel more relevant

to the world as they see it, and to the work in which they hope to be involved later. The aridity of some of the subject matter that they have to learn and the boring unreality of many of the facts that are demanded raises an antipathy to the different disciplines, and initial interest and enthusiasm are eroded by the increasing irritation and frustration. Yet why are these approaches maintained by teachers? Inevitably the major reason is the examination system and the structure of the syllabuses that are required, but with the increasing responsiveness of the examining boards to this situation and the new contour of so many subject regulations, it could be hoped that a brighter future would be on its way. The disquieting feature is in the reaction of many teachers to these new syllabuses, for it is clear that their open-ended nature and their failure to narrow the content to a list of required facts has caused much dismay. While some blame must be levied on the manner in which they are written, it is important to appreciate that such a reaction shows a significant depth of unpreparedness for this kind of change. The lack of security which it implies, the need for a looseness of attitude in the classroom, responding to, as much as guiding, the work of the pupils, the willingness to exploit the red herring rather than command its disappearance in order to keep to a schedule, these are alterations which teachers are often unprepared to accept.

The second source of discontent is closely related to the first. Perhaps it is partly the result of our permissive age, but there is a growing refusal to accept the old regimes of discipline. While many of the complaints are aimed at minor rules and customs, there is a clear undercurrent of distaste for the dictatorship of the classroom and the lecture theatre. Freedom to talk and work together with others in the classroom is a small change but significant for those teachers who have always dominated their lessons. Lecturers too, have to accept chatter, intruded questions and argument, indeed a great variety of interruptions, in order to leaven the atmosphere, and often improve the teaching too.

Linked to these are, firstly, a new emphasis on the need for relevance of the subject matter so that it actually helps the pupils to survive in the working world, and secondly, a desire from the learners to explore in greater detail those areas of their disciplines which particularly interest them. If such an exploration is allowed, then the results should be acceptable for assessment in any linked examinations.

Just as the area of dissent is not wide, and the number of protesters limited, so the size of the discontent described above is not large. Nevertheless the undercurrent is important for it is sufficiently widespread to indicate a trend for the future. Running alongside this mood for change, based on the dissatisfaction of the pupils, is the enormous increase in information that is available and often meant to be absorbed. Not only is it impossible for pupils to accept all this, much of which will only swamp subjects in a sea of unnecessary facts, but clearly a new attitude has to be taken. This seems to be a greater emphasis on three of the methods of learning defined by Gagne[2], the organised understanding of concepts leading to a knowledge of principles, and a use of this knowledge in problem-solving situations. It must not be thought that other methods of learning are to be ignored. Each discipline has its own grammar and language which needs to be known before its concepts and principles can be explored.

Yet, the results from these methods must be reflected in examinations, more especially as the passes and credits from these have such an impact on job prospects. The demand for education from parents is increasingly a demand for exam successes, and the quality of the learning is not so important. To satisfy these expectations from society, there is an obvious tendency for teachers to restrict their targets to certainty of passes, and to resist any ideas of experiment. It is easier to reach satisfactory conclusions from well-trodden pathways than from ventures into the unknown. Even if such an approach requires

the dominance of the teacher and fosters greater pupil dissatisfaction the results in prestige and gratitude from parents are worth it.

So there is an inherent dilemma, typical of all innovations, which is tied up in a circular argument. If new freedoms are adopted with more emphasis on the newer learning approaches, then examination results may not be as satisfactory as in the past. Few teachers are willing to take such steps into such dangerous territory of potential failure, particularly as they are aware of insecurity and loss of personal control when they do; so when a few examination questions are offered which attempt to test this territory, such questions are largely ignored, and the examining boards are reluctant to include them. Their absence makes it impossible for the few teachers who are willing to attempt these new methods to have their pupils tested adequately, and lack of time reduces the teacher's use of them to a minimum. Experience of working with examining boards has made me very aware of their reluctance to lead in making radical changes, and any alterations tend to appear in very small steps.

Resource-based learning however, is a fundamental alteration. It offers a freedom to the pupil to explore a field of study in his own time and to a depth controlled by his own capability. It can extend and excite an inherent interest, and create conditions in which the pupil has to organise a mass of knowledge into conceptual systems which he can understand, a facility which will be of value in any field of post-education work. It can force the pupil into attempting the search for solutions of problems because of the motivation of interest within him. It can give satisfaction to the discontented, and fulfil those most disquieted by the contentious issues at the beginning of this paper. It allows the pupil to work and learn, rather than making him recall the dictates of the teacher. It can offer pleasure and enjoyment in learning by destroying many of the embittering disciplines of the traditional methods.

While the present trends in education appear to make resource-based learning inevitable, the implications and the radical nature of the approach seem to be misunderstood. Resources in this context are materials which pupils can use to discover and explore a field of study, sometimes guided, sometimes finding their own way. For the slow learner as much as for the fast, they present opportunities for study which each can exploit according to his own ability. To do so, the pupils must have suitable conditions in which to use these resources, and means by which they can indicate to their teachers the successes and failures of their work. It is the latter which presents the greatest public difficulty, but it is the former which can stifle the teacher permanently. Good ideas, good methods and good resources defy good use in poor working conditions. While resource-based learning can take place in a traditional classroom, its value is considerably enhanced by the economy and efficiency afforded by the use of a resource centre. To obtain such a development, it is necessary to demonstrate the value of using such resources. Some evidence is already available in the work of S. Heaney[3] which demonstrates the success of the Nuffield 'O' level Biology materials. The interesting conclusion from this research is that the retention time for the knowledge obtained from the Nuffield course is much greater than that obtained from learning by more traditional methods. While this Biology course is not entirely typical of resource-based learning, it has enough common elements to act as a guide to the kind of research conclusions that could be expected. What is needed now is the long-term research work to test the validity of this approach. Care must be taken in deciding the criteria for judgement in such research, for they may not be the same as those for traditional courses. It is, however, already clear from the limited experience available, that resource-based learning gives much more pleasure and stimulus to the pupils than do the other approaches.

To help it develop, resource-based learning does require the presence of resource centres. However, the structure and organisation of these defies a uniform or standard definition. Each situation and institution has its own constraints and quirks which force a resource centre into a particular shape. The opportunities presented by a centre are similar to those offered by actively-used libraries, in so far as they provide access to a collection of materials which are organised in some manner, but any collection of information must be in a form which communicates with the searcher, and, with the present generation, it is clear that the written word is only one of the 'languages' which are being used. Indoctrination by pictorial and aural messages from an early age makes them rapidly familiar with these methods of communication and their grammar. Not to use them and exploit their special advantages is to limit severely the channels of communication that are available to pupils. Increasingly, educationaist must think of transmitting their ideas by pictorial and aural means as well as the written word. The latter remains just as valuable, but it would be foolish to ignore those 'languages' with which the pupils are familiar, more especially as they can provide their own characteristic dimensions to a body of information.

The resource centre, then, should provide access to a multiplicity of materials which exploit individually or collectively a number of communication channels. The variety of media involved adds its own interest and motivation, for switching from one form to another introduces changed viewpoints which activate different thought-patterns. A natural result of this is an increased period of concentration and a longer time of serious learning. For the pupils, these newer physical forms are familiar items of their home environment. Records, slides, and cassette tapes are widely distributed domestically and using them is a simple procedure. As a result of mass production, the machinery itself is not the major expense that it was, and the cost factor which hinders the development of resource-based learning is far more dependent on the

materials and the staff development time. Once they are created, the materials can usually be used in the home as easily and safely as books.

While it is clear that no one scheme for a resource centre will be suitable for all educational institutions, there are common functions which should underline their development. The basic requirement is similar in many ways to that of a library in an extended form, providing a positive service to its institution. By positive, I mean a closer involvement of its staff in the curriculum development procedures and discussions of the teachers and lecturers. The facilities and opportunities offered by a centre should be extended in every discipline in a form that is appropriate, but they can only be known and understood by the staff explaining their value in the context of the preparation of syllabuses and work schedules.

These fundamental functions appear to fall into three main areas. First, there is the guidance to the information materials, using the term 'information' to include the widest spectrum of ideas, data and cultural expositions. Such guidance may be only a catalogue of all the likely materials and an indication of where they may be obtained, seen or listened to. Such a catalogue should include those used by pupils for exploring, and items which are not in the individual establishment but located in the environment, such as buildings of historical interest, or in other collections, such as 16mm films, may be included if they appear relevant to the courses being taken.

A great deal of unnecessary effort and time would be consumed if the majority of the materials were not in close proximity to the catalogue itself, and this is where the image of the library emerges. While it would be accepted as sensible for many materials to be situated in the area where they are most frequently used, there are usually many resting under a coat of dust because nobody has realised their existence or value. Some careful measurements of

convenience and rate of use have to be made before any firm decisions can be taken as to whether an item should be located in the resource collection or in the teacher's store cupboard. Wherever the site, the central record is needed in the catalogue, but it would be foolish to place an item in the resource centre because it is easier, administratively if such an action inhibits its use by the teachers. In the ideal world of plenty, every teacher would have everything he needed, but such extravagance is prohibited by the cost, and the waste that would result.

Secondly the centre should guide the user, whether he is teacher or learner, to the collection of equipment that is used to present materials. Projectors, tape recorders, viewers, record players need to have someone responsible for their control and maintenance. If materials to be used with this equipment are present in the resource centre, then it is logical to keep the records of their existence, condition and site in the same place. As with all machinery involving a capital investment, a certain rate of use is necessary to justify the existence of the equipment and the rate of use can be increased by sharing it among many teachers and learners. If this is to work efficiently, it is usually necessary to maintain a central control, and this is an appropriate extension of the work of the resource centre staff.

Thirdly, resource-based learning demands an impressive quantity of materials for the learners to explore, and many of the most appropriate ones do not exist in the form or condition that makes them readily used. Others need to be specially devised because they refer to local situations or have to be tailored to the individual characteristics of a particular teacher or learner. Both of these requirements infer the existence of production machinery and the resource centre is again a logical organisation to care for this. Not only are many of the original materials to be altered and manipulated already catalogued and stored in the centre, most of those produced will at

least need to be recorded there and, probably, also kept by the staff of the centre. The level of sophistication of the production equipment will need careful consideration in the light of its use, the proximity of other similar equipment which can be used and the cost of the installation together with its specialist staff. Reprographic and duplicating equipment is essential in every establishment, together with means of recording broadcast radio and television programmes. Facilities for sound recording, photography and the production of transparencies for the overhead projector are usually in frequent use. For those with a heavy demand, equipment for the production of teachers' own television programmes may be needed. In providing all these facilities, there is a great danger of the resource centre becoming a small publishing house. There are already examples of such centres churning out hundreds of thousands of sheets of paper for distribution to pupils. Most of the national curriculum projects end up with a welter of materials in many media for schools and colleges to use, and with time and careful dissection, it is possible to shape these, or extracts from them, into a form which suits the local syllabus. With their own production equipment, teachers often neglect these possibilities, perhaps with unnecessary cost to their institution.

A resource centre, then, offers guidance to the teacher or learner in finding materials that he wishes to use, assists him with any equipment needed to present it, and offers opportunities for further production of new sources. Whether there is one central unit serving the whole establishment, a master collection with slave centres attached to each disciplinary unit, or a total dispersal of materials with only a central record being maintained, will largely depend on the arrangement of the site, the size of the institution and the will of the staff. The effective use of resourcesdepends on access and motivation. If pupils or staff find it inconvenient or difficult to reach the sources they require, then these sources will not be exploited. A dispersed site served by a single central resource unit may destroy any incentive, just as overcrowded conditions will make purposeful work impossible. Too many regulations, or

restricted access, may prevent the pleasurable exploration of materials and reduce the motivation of the users, but the most critical element for the success of the centre is the attitude of the teaching staff. If they do not support it with help and involve it in their curriculum planning, if they do not encourage their pupils to use it, then the most expertly arranged and managed centre will be an empty shell. The development of any centre is finally dependent on the willingness of the teachers to make use of resource-based learning in these conditions.

It would be foolish to evade the inherent difficulties in using this approach. Any institution facing up to this form of innovation is confronted by a number of dilemmas and lines to be drawn. In devising a curriculum, just what is the balance between pedagogic instruction and resource-based learning? How much of the latter should be tackled by the individual and how much as a group? There is not, and indeed is unlikely ever to be, satisfactory evidence to give a lead to teachers in this, for essentially the mixture will depend on the personalities involved and the atmosphere of the institution. Every teacher knows for example how influential are the preceding and succeeding periods of work on the success of his own lessons. With an approach which depends so much on a willing and open attitude to the learning process, the general atmosphere of the institution can have a considerable effect. Resource-based learning all day will probably be as self-defeating through its lack of human contact as a solid mass of instruction. Co-operation between teachers faced with the same groups of pupils in different periods is an important concomitant to the success of such an innovation.

Recent work in the theoretical aspects of educational technology has seen a slight moving away from the more rigorous interpretation of the systems approach. Early protagonists felt that a long period of programmed learning could be more of a success than it has proved to be. The same boy quoted at the beginning of this paper also wrote 'Teaching machines can be put to good

use, but indiscriminate use makes them boring and ignored. For some things a teacher is indispensable'. Tying a pupil to a programme for longer than an hour seems to be as debilitating mentally as listening to a factual recital in the traditional lecture, yet there is no doubt that pupils need guidance through the maze of resources that they can use. Particularly in the early stages of using them, they need help in selecting the right pathway and assistance in distinguishing the main route from the interesting diversion, but giving such guidance in the form of a manual can be as constricting as the strait-jacket of programmed learning. Useful in small doses, in larger ones, it can destroy motivation. Many of the interesting diversions can be valuable educationally, if only by giving the mind time to rest before the next injection of learning. There is, again, a difficult line for the teacher to draw between too much freedom of choice and too much guidance.

If there are difficulties, they are worth facing for the successful learning that may emerge from adding resource-based learning to the general format of the curriculum. As they become more closely involved in their subjects, discovering and organising their ideas for themselves, pupils show a greater pleasure in and appreciation for their different subjects. They remember more for a longer period of time as they make use of the techniques and concepts that they have unearthed. The unease described at the beginning of this paper is not merely a publicity gimmick, but contains a definite revulsion at the inept manner in which learning is currently served up. Resource-based learning and the freedoms that are associated with it, seem to be a positive response which will allay many of the criticisms. Without the support of the teachers, however, it cannot succeed. They have to overcome their sense of insecurity and accept that their relationship vis-a-vis their pupils can no longer be master and pupil. Instead there is a greater equivalence of position in which the dominating characteristics are experience and knowledge. A successful innovation depends on the willing co-operation of the participants, and such an attitude of mind is a necessary precursor for resource-based

learning. Centres are merely the physical means of providing the opportunities. In themselves the centres offer only a management structure. It is up to teachers and pupils to exploit them.

1. Edward Blishen (Editor), The School that I'd Like, Penguin Education Special 1969.
2. R.M. Gagne, The condition of Learning, Holt, Rhinehart & Winston, 1965
3. Sally Heany, The effects of three teaching methods on the ability of Young Pupils to solve problems in Biology. An Experimental and Quantitative Investigation. Journal of Biological Education. Vol 5 No 5 Oct. 1971.

Richard Fothergill.

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At a recent educational conference I was asked, (by a parent of one of my fifth-form pupils), to justify, explain or comment upon the fact that his son never really used or went into the Resources Centre. This type of comment, with many variations, makes me feel that perhaps those involved in the Resource Centre development, (movement, bandwagon - call it what you may) are failing to emphasise the more important aspects and implications, and the educational thinking behind the whole concept.

Resources Centres are certainly about reprography, audio-visual services, multi-media libraries, workshop facilities and storage and retrieval systems. We are keen to transform libraries and make them less like mausoleums and more like centres of knowledge. We also want to open departmental store cupboards, (gold-mines), and make the treasures available to all. We want centres with data for all forms of learning, making the school an information bureau ready to service all enquiries, including those that lead to points outside the school, but we must not build up an image that for a pupil, a teacher or a school to be successful they must walk to this 'monolithic', 'all-knowing' Centre where all ills will be cured. A Resources Centre must be much more than a room built to house resources. Certainly we need a central information point which will give access to data but we need much more than a warehouse for teaching material and learning resources. What then is a Resources Centre and why then do I propose resources centres and resource-based learning as an educational process?

In recent years the need for Resources Centres has become urgent. The need has come from the classroom because there has been a crisis caused by the very real pressures of curriculum development and the need for innovation. The move towards individual and more independent learning, group activity, and

enquiry-based methods has added to the pressure in schools to meet the needs of such learning systems. Many of the recent learning theories have emphasised the need for activity and discovery methods, and accompanying this the underlying philosophy to provide for the individual differences of pupils (Schools Council, York. General Studies Project on Guided Individual learning with Tutorials and Seminars. G.I.L.T.S.). This movement away from class instruction towards a more flexible teaching and learning situation has found the schools totally unprepared for the tremendous demands on both materials and human resources. Class instruction can exist without a vast supply of multi-media resources but individual enquiry methods demand a sophisticated collection of materials. In class instruction the teacher has been the Resources Centre, the supplier of all knowledge, supported, (usually very badly), by the textbook. The textbook, one copy for every pupil, implied a regular advance by all, and those who couldn't meet the pace of the language of the textbook, (written for the 'unknown' pupil), were left behind. This extreme picture has in the last decade started to change and much more variety in learning styles and materials has become apparent in schools. However, with class instruction one still can survive with the teacher and the textbook, but where learning is individualised this provision will not suffice. The teacher can no longer stand as the sole purveyor of knowledge. The teacher becomes the organiser of learning situations in every sense. He must cater for a variety of individual needs, structuring learning guides, creating material where there is none available commercially, tutoring pupils with problems, satisfying different pupils' tastes and skills, interests and learning speeds. A new role for the teacher? Certainly many teachers have been doing this for years but recent curriculum developments and innovations in schools have suggested that this pattern should be the norm and that the teacher-dominated class performance, albeit charismatic and awe-inspiring must become the 'special', used for those situations that demand that type of presentation. All this of course implies that in the school there must be a vast collection of many thousand items of multi-media resources and services

within the school for teachers to create and develop their own resources should they be unobtainable otherwise.

It is the drive for curriculum development and the need for innovation that have created a classroom crisis. Much of the textbook material that has been available has not been suited to the proposed new learning styles. Teachers are therefore being asked to provide much of their own. This includes the content and the structured guides and assignments. Schools Council Projects have done much to stimulate this activity but follow-up is often weak and the teacher is once more left to fend for himself. When and where teachers have been able to develop learning material and use new teaching styles a noticeable change in relationships has occurred within the classroom. The role and relationships between teacher and pupil has developed into one of interdependence and closer co-operation with a corresponding mutual benefit. The "evaluation in education" lobby will demand evidence and at this stage there is little available that would be acceptable empirically, but in the last five years I have observed many examples of teachers who have experienced this development and believe quite strongly that it is this changing relationship that is the starting point of all curriculum development. The Resources Centre is there to facilitate this change and the implications within the school for teachers, materials, equipment and pupils. The Resources Centre is not there to determine the curriculum, or to offer panaceas in the form of brightly coloured packs on how to teach.

The teaching aspect is one that is vital to the whole concept of Resources Centres. All the new courses, new teaching styles and varied learning provisions for pupils, the obtaining and preparation of back-up material, the use of equipment and technology and the evaluation of new techniques are demanding a great deal from the teacher. Re-training is becoming a normal part of many aspects of industry and commerce and the very heavy demands upon the teacher outlined above suggest very strongly that the teacher must keep up to date. It is probably true to say that the teacher is 'a victim of role inflation',

and some provision must be made within school to help him adjust to his new roles. A Resources Centre must give teachers the opportunity to be truly professional by allowing them to develop their skills. This can be best done, in the school, using the Resources Centre as an agency for teacher development. It is here that teachers will be able to re-train, re-think, plan their work, create material, learn new skills and collaborate with their colleagues, finding solutions to their common problems and disseminating ideas at a highly professional level through an intensive form of in-service training. Such a scheme would be complementary and supportive to agencies outside the school that are involved with in-service training. Thus the Resources Centre would combine the two key concepts of curriculum development and teacher development and provide a working environment, within the school. This, supported by reprographic, library, audio-visual, and workshop facilities would create a power-house within the school that was constantly involved at all levels in re-thinking the role of the pupil, the teacher, the curriculum, the school and its relationship with the community.

Any such development has serious implications for the school and the people who work in it. I should like now to consider some of these more important areas.

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## RESOURCES CENTRES AND THEIR IMPLICATIONS:

### FOR TEACHERS

The creation of resources centres in schools inevitably questions the role of the teacher as the sole purveyor of knowledge. Traditionally the teacher in his teaching 'cell' has been limited in the opportunities he has provided for himself and for his pupils. An open-access central resources area or a group of satellite centres providing multi-media material is bound to open up the learning environment. However this in itself will not mean an automatic improvement in the learning since the teacher must guide the pupil to or through the mass of material that any centre will develop. The growth in the amount of data generally available today is a serious problem even to teachers who struggle to

keep up to date, therefore it is vital that the pupil's learning is structured. This will take the form of guides and notes helping the child to find the right data and to use it effectively. The teacher must therefore assume the role of guide and tutor, training to retrieve and use effectively the appropriate resources. The pupil will be supported by the teacher rather than forced to follow the same path along the same line of enquiry. This independence and interdependence will not be accepted readily by all teachers or all pupils, but it will allow for a more flexible relationship to be created between teacher and pupil. If this resource based learning is linked in any way to team or co-operative teaching, a very flexible situation will be established in which contact will be made, not only with a variety of resources, but also with a variety of teachers. Such a development moves even closer to the type of situations the pupil faces at home and in the peer and neighbourhood groups, where there is no one answer or one solution to a problem, but where many sources have to be consulted before any conclusions can be drawn.

FOR LIBRARIES AND LIBRARIANS:

It is not the intention of this paper to present the concept of resource-based learning as a panacea for all the ills of education but there is little doubt that Resources Centres are the panacea for the school library and the school library service. This facility, in the majority of schools, is the most uneconomic, most underused and least effective educational instrument. It is rarely staffed by qualified librarians, and where some staff have been provided, they are little more than clerks putting date stamps on books or struggling to determine a Dewey classification for some interdisciplinary book that does not fit clearly into the predetermined order. Moreover, it may prevent Headteachers who wish to use the library as a teaching area from doing so, thereby preventing the rest of the school from using the resources. It is a criminal waste that throughout the day thousands of books and millions of pounds worth of resources are not accessible, not only to the school but to the whole community. This is

poor investment and the potentials of the situation are not being realised. Libraries are often appendages to schools, failing to provide material for teachers to enrich their teaching, and not allowing children the delights of learning by discovery. Resources Centres, embodying the libraries, must become centres of learning within the school, a nerve centre, a power-house of information, full of resources, material and human, that will send a child, (and teacher) back to his classroom full of enthusiasm, loaded with data, or if what he needs is unobtainable in the school, with the name of a source outside the school and a means of obtaining it quickly. If this is to happen, then the following implications cannot be ignored:

1. Libraries must be properly staffed with professionally qualified chartered librarians. Schools with a thousand pupils need one full-time librarian.
2. Chartered librarians need a link with the classroom to advise them constantly about developments within the school. This link can be best provided by a teacher on the school staff, preferably one of high status and experience who has a general interest in education and can advise staff and pupils on how to obtain resources and services.
3. Ancillaries in this area will serve the whole staff and leave the librarian and teacher/librarian free of clerical tasks, therefore some ancillary time must be found.
4. The library must be open all day, particularly in lesson time.
5. The library must not be used as a formal teaching base. If it has to be so used, then the resources should be put in the corridors where they can be used.
6. Adequate funds must be set aside for expansion of the library.
7. The library image has to be changed from its leather-bound book image to one of a multi-media nature. Reading machines, micro-fiche readers, O.H.P. projectors, tape-recorders must break the 'sound barrier' and enter where many still fear to tread. This may prove to be the most difficult task of all.

8. The library has to move into the school, into the departments, and show teachers how it can support effectively and help develop the teaching and learning within particular subjects. For too long librarians have sat back and waited for visitors. They must extend their influence by going into the classrooms and selling their wares.

FOR SCHOOL FINANCES AND STAFFING

The development of Resources Centres, like any other growth point in education, needs financial support, not only to provide the equipment and the materials, but, more important, to allow for staffing.

Very few schools have a comfortable staffing provision and the needs of Resources Centres must stand alongside the claims of many other worthwhile developments. However, the Resources Centre, because it will centralise the ancillary services, will mean a much more economic service to all teachers within the school. Inevitably, teachers having such support, will be able to give much more effort to using their real professional skills, developing a whole variety of learning styles to suit their own and their pupils' needs.

The whole question of ancillary support is a vital one. The present system is chaotic, relying on the whims of Authorities, Advisors, Headmasters or influential Heads of Departments. Some schools have Domestic Science Helpers, others Rural Science Assistants. Many have science technicians. Few schools seem to feel the need to assist English, History, Geography or Art teachers. (The kind school secretary, well supplied with chocolates, will, however, always find time to type the odd stencil!).

A central ancillary service will give support to all teachers within the school and will use human resources much more effectively. Far too many teachers waste valuable time typing skins or Banda masters when such work could have been done more efficiently and more quickly by a trained typist.

All this does not necessarily mean more staff. In some areas, particularly the technical/reprographic and graphic, it is possible that more expert help will be required, but in the secretarial/clerical it may mean redeployment of

the present resources.

This implies that far more headmasters must be willing to look closely at the services they are offering their teachers, and evaluate distribution and cost-effectiveness in economic and educational terms. In some cases O. and M. analysis is necessary, possibly by outside agencies.

A Resources Centre must serve the whole school; the pupils, the staff, and the curriculum. This is a tremendous task requiring very efficient organisation, and beyond the capabilities of any one person. It must be a team effort, drawing together the skills and expertise of as many members of staff as is possible. A librarian is essential and a teacher-librarian must be there to provide a link between the classroom and the multi-media library. An educational technologist with skills in the graphic arts and a combination of artistic and educational knowledge will be able to advise staff on the creation of all forms of teaching and learning material. These professionals must then be supported by a team of ancillaries covering the clerical, reprographic and audio-visual needs of the school.

Any such Centre will require an organiser, an advisor, - the titles will be many and varied, - but the function and responsibilities will be similar. This person will be responsible for the Centre and its relationship to all the teaching and learning in the school. He will need to have a status, equivalent to that of the Senior Heads of Department, enabling him to organise the work of ancillaries, equipment and resource materials.

Such a task will demand that he is familiar with developments that are taking place in education and enable staff to become familiar with such ideas. The school curriculum must be constantly in his mind. He must be aware of its needs, and planning for development within its ever-changing boundaries. He will, in fact, be educating and serving the professional needs of staff.

Many schools have, in varying degrees, some or all of these people, therefore the creation of a Resources Centre within a school does not necessarily mean, that a large number of new staff will be required, but, inevitably, some

schools will not be able to supply people to fulfil all these roles. Its short and long term needs will determine what its priorities will be with regard to staffing. Any improvement in the general staffing of the school will mean, however, more flexibility and the possibility of redeployment of human resources.

Critics of Resources Centres and resource-based learning rightly draw attention to the amounts of money required to provide resources for independent and individualised learning. Education must become more cost-conscious. Much of this criticism is based on scant empirical evidence since little work has been done by educated researchers. To evaluate its cost effectiveness in educational terms at this stage is impossible, since no control groups have been created and there are so few working models in existence. The Nuffield Resources for Learning Project is involved in a raw analysis of 'package-based learning' and a number of alternative learning methods. They assume no educational gains or losses from such systems of learning since their assessment is purely cost and not cost-benefit. They predict increased expenditure but feel that it should not be prohibitive. Such a study must be treated with caution since they are looking at package-based teaching as an exclusive system and not as a contributory learning style to a whole range of learning situations.

If we are to take the premise that time means money then there is no doubt that Resources Centres and resource-based learning are going to cost money. Staff time is expensive and much of their time will be taken in planning, preparing and organising resources. Through my experience in two schools involved in resource-based learning, I have seen an involvement by staff at a very professional level and this interaction between staff has been invaluable in terms of in-service training experience and cross-fertilization of ideas. It may be costly, but I feel there is much subjective evidence to show that it is being cost effective. Time <u>can</u> be found during the school day. There is much that can be done by careful use of the timetable or the way one organises the teaching day. Moreover, techniques like team teaching give tremendous

opportunities for allowing staff more time to plan and prepare. Resources mean any item that is worthy of study, and at the moment, in many schools, the sad fact is that many resources are not generally available. Far too much is locked away in departmental store cupboards available only through the Head of Department, or far too much is stored away without any form of retrieval system. Moreover, at the moment, isolated departmental buying often leads to duplicated expenditure and duplicated resources. Since money is scarce, this system cannot be allowed to continue. There must be some central control to prevent wastage of financial resources. This does not mean that a Resources Centre interferes with the content of a department but it does mean that the centre takes on the role of liaison officer and provides an information service for all departments enabling them to know what is available throughout the school. As the move towards more interdisciplinary teaching develops such co-operation is essential.

At the moment there is little evidence to suggest that schools' financial resources are being used effectively. The Resources Centre, as an agency within a school, provides a unique organisation that can measure the effectiveness of resources, monitor their use by providing opportunities for closer teacher and pupil co-operation, and possibly, in the long term evaluate their usefulness as learning material.

RESOURCE CENTRES AND IN-SERVICE TRAINING

Much of the in-service training that is offered to practising teachers takes place outside the school. Many of these courses stimulate the teacher and provide him with new ideas, but once he returns to school there is little opportunity for him to try any innovation or instigate some minor form of curriculum development. From where does he obtain the money? Who develops his material? Who produces it? How can he show other colleagues what he means if he is able only to talk about ideas? He has to have within the school a supportive agency which can help him create some new material. He needs a secretary to type his worksheet, a Technician to make his slides or O.H.P.'s. Moreover, he need an adviser within the school who can help him turn his ideas

into a workable learning situation, someone who has worked on the 'shop floor' and can advise on teaching techniques and learning skills. Finally there has to be some pool of money that is there to service innovation and curriculum development. This can be provided by the Resources Centre acting as a generative and supportive body, helping all departments and all teachers. Far too often, young teachers arrive in schools full of ideas but are unable to put them into practice through lack of support, possibly because a department is unable or unwilling to finance innovation. Having an agency within a school that has no subject bias, will encourage innovation and change, and create a healthy environment in which they can develop their professional skills effectively.

Once an idea has been tried and proved to be successful the Resources Centre must then act as a disseminating agency and show other departments what has been done, in the hope that they too might be able to use the same technique. Displays in the workshop and the Centre are a good starter.

The real potential of any Resources Centre can only be revealed to staff by giving them the opportunity to work in it. Initial training can be given by releasing staff from teaching duties for, say, a week. The range of services can be demonstrated - production, storage and retrieval, the handling of equipment - and how teachers and pupils can make use of these services. Within the centre there will be a whole range of teacher-created material. This can be shown to staff as models of structured material, some successful, others perhaps not so valuable. Seminars can be held to discuss the creation of material or specific problems related to their own subject or department.

New equipment, new ideas, new projects are constantly being developed and to assist the teacher in keeping up to date, the Resources Centre can run extra courses on specific topics for interested staff.

One vital role of the centre must be in providing a link with bodies outside the school. These can be schools, teachers' centres, or any organisation

that could work with the school in a study group or workshop situation. It is up to the centre to organise, stimulate and develop such contacts on behalf of the staff.

School based in-service training is an essential and vital role of any Resources Centre. Such activities will enable teachers to keep abreast with new developments in education. It will encourage collaborative thinking and make teachers more aware of the professional work of their colleagues.

FOR SCHOOL BUILDINGS

Most of the schools which are developing resource-based learning techniques do not have purpose-built facilities. A small number of schools have purpose-built Resources Centres and a number of authorities are planning schools with Resources Centres as a very important function within the system. The vast majority of primary and secondary schools will have to adapt their accommodation, re-use locker rooms, take over corridors, re-fit conventional classrooms, adapt the present library.

There are no ideal conditions in terms of buildings for Resources Centres just as there are no ideal conditions for any part of today's educational needs, for if one plans and thinks in terms of today's needs then one will be poorly prepared for tomorrow's needs. Resources Centres must be flexible and adaptable if the concept is to be applied to a variety of physical environments. It is the organisation, the pupils and the staff, that will create the Centre, using whatever facilities are available. Obviously there will be many inconveniences, but if the school believes in the concept of the Resources Centre, offering a variety of media, a place where pupils and staff can share materials and ideas, where there is in-service training for teachers and opportunities for independent learning, then it will happen. For some the growth will be slow and painful but as in many aspects of change, evolution is better than revolution. A new extension forced on to a school will not create a Resources Centre overnight. A Resources Centre implies first and foremost co-operation and involvement by pupils and staff.

Where schools do have the opportunity to consider new buildings or redevelop old ones, this is an exciting and worthwhile experience. Care must be taken to consult the staff involved since most of the problems in Resources Centres are to do with people and their involvement.

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SCOTTISH CENTRAL FILM LIBRARY. Catalogue of 16 mm sound educational, documentary and classic films, including filmstrips. SCFL, 16/17 Woodside Terrace, Glasgow G3 7XN. New edition £0.50. (Arranged by Dewey decimal. All non-fiction films. Target audience and suitability are indicated. Over 7,000 items.)

SCFL. Catalogue of 16mm silent films (educational and documentary). Details similar to above. (With notes on suitability and target audience. 1,200 items.)